



Hui Sun

Department: School of Chemical Engineering
Professional field: Chemical Engineering and Technology
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Profile

2020.9 – Present East China University of Science and Technology, School of Chemical Engineering, Professor
2013.11- 2014.11 The University of California at Davis, Department of Chemical Engineering, Visiting scholar
2013.9 - 2020.8 East China University of Science and Technology, College of Chemical Engineering, Associate professor
2009.7 – 2013.8 East China University of Science and Technology, College of Chemical Engineering, Assistant professor
2004.9 – 2009.6 East China University of Science and Technology, College of Chemical Engineering, Ph.D.
2000.9 – 2004.7 Jiangnan University, Chemical Engineering and Technology, B.A.

Research Field

1. Purification of gas & oil resources (desulfurization, decarburization, etc.).
2. Separation and high-value utilization of low-carbon hydrocarbons for the transformation and development from refining to chemical Industry.
3. Capture and conversion of carbon dioxide.
4. Development and functional enhancement of porous materials, including molecular sieves, organic frameworks, porous liquids, etc.

Research results and main published thesis

1. Yuxiang Chen, Chuanlei Liu, Yang An, Yue Lou, Yang Zhao, Cheng Qian, Hao Jiang, Kongguo Wu, Benxian Shen, Xianghui Zhang, Fahai Cao, Di Wu*, Hui Sun*. Intelligent Molecular Identification Approach to High-Efficiency Solvents for Organosulfide Capture Using the Active Machine Learning Framework. *Energy & Fuels*, 2023, 37, 16, 12123–12135
2. Yu Chen, Hao Jiang, Qilong Peng, Diyi Fang, Chuanlei Liu, Kongguo Wu, Yuxiang Chen, Weikang Gao, Hao Wang, Guanchu Guo, Fengjing Yang, Peicheng Li, Benxian Shen, Feng Zhang, Di W*, Hui Sun*. Successively separating C₃H₆ and C₂H₄ from C₂H₄/C₂H₆/C₃H₆/C₃H₈ mixture in tandem fixed beds involving two zeolites LTA well-regulated via low transition-metal doping. *Chemical Engineering Journal*, 2023, 473, 145151.
3. Qilong Peng, Yu Chen, Diyi Fang, Chuanlei Liu, Kongguo Wu, Yuxiang Chen, Hao Jiang, Yuanyuan Sun, Qiumin Wu, Di Wu, Hui Sun*. Enhancing Size-Selective Adsorption of CO₂/CH₄ on ETS-4 via Ion-Exchange Coupled with Thermal Treatment. *Industrial & Engineering Chemistry Research*, 2023, 62, 23, 9313–9324.
4. Yuxiang Chen, Chuanlei Liu, Guanchu Guo, Qiyue Zhao, Hao Jiang, Qiumin Wu, Diyi Fang, Weikang Gao, Yu Chen, Qilong Peng, Kongguo Wu, Benxian Shen, Di Wu, Fahai Cao*, Hui Sun*. Physical–chemical coupling machine learning approach to exploring reactive solvents for absorption capture of carbonyl sulfide. *Chemical Engineering Science*, 2023, 280, 118984.
5. Chuanlei Liu, Yuxiang Chen, Guanchu Guo, Qiyue Zhao, Hao Jiang, Kongguo Wu, Qilong Peng, Yu Chen, Diyi Fang, Benxian Shen, Haitao Shen, Di Wu, Hui Sun*. Interpretable Machine Learning Model for Predicting Interaction Energies between Dimethyl Sulfide and Potential Absorbing Solvents. *Industrial & Engineering Chemistry Research*, 2023, 62, 12, 5274–5285.
6. Kongguo Wu, Chuanlei Liu, Yuxiang Chen, Hao Jiang, Qilong Peng, Yu Chen, Diyi Fang, Benxian Shen, Qiumin Wu, Liang Zhan*, Weizhen Sun, Di Wu, Hui Sun*. Constructing asymmetric unsaturated copper coordination in Zinc(II)/Copper(I, II)-based metal-organic framework toward productive CO₂-to-methanol photocatalytic conversion from CO₂-capturing solution. *Applied Catalysis A: General*, 2023, 650, 118970.
7. Yuxiang Chen, Chuanlei Liu, Guanchu Guo, Yang Zhao, Cheng Qian, Hao Jiang, Benxian Shen, Di Wu, Fahai Cao, Hui Sun*. Machine-learning-guided reaction kinetics prediction towards solvent identification for chemical absorption of carbonyl sulfide. *Chemical Engineering Journal*, 2022, 444, 136662.
8. Yang Zhao, Yuxiang Chen Cheng Qian, Hao Wang, Hao Jiang, Cheng Niu, Junhao Gai, Qiyue Zhao Yue Lou, Benxian Shen, Di Wu, Hui Sun*, Yujun Tong. Constructing AgY@Cu-BTC hybrid composite for enhanced sulfides capture and moisture resistance Microporous and Mesoporous Materials, 2022, 341, 112043.
9. Xianghui Zhang, Cody B. Cockreham, Zhiyang Huang, Hui Sun*, Chen Yang, Oscar G. Marin-Flores, Baodong Wang, Xiaofeng Guo, Su Ha, Hongwu Xu, Di Wu*. Thermodynamics of Water–Cationic Species–Framework Guest–Host Interactions within Transition Metal Ion-Exchanged Mordenite Relevant to Selective Anaerobic Oxidation of Methane to Methanol. *The Journal of Physical Chemistry Letters*, 2020, 11: 4774–4778.
10. Wang, J; Yilmaz, E; Zhang, XH; Li, HQ; Zhang, RQ; Guo, XF; Sun, H*; Wang, BD; Wu, D*. Hydration Energetics of aDiamine-Appended Metal-Organic Framework Carbon Capture Sorbent. *Journal of Physical Chemistry C*, 2020, 124(1): 398–403.